

NORTH PACIFIC OCEAN, MARCH 1938

By WILLIS E. HURD

Atmospheric pressure.—There was a distinct change in the pressure situation over the great central region of the North Pacific in March as compared with that in February. In the preceding month the barometer was abnormally high over the Aleutians and unusually low in the vicinity of Midway Island. In March the conditions were reversed, with the Aleutian Low deeper than in any previous March since 1926. At Dutch Harbor at or near the average center of the Low, the mean barometer, 29.49, was 0.21 inch below the normal. At Midway Island, near the average center of the North Pacific high this month, the mean barometer, 30.22, with departure from the normal of +.15, was the highest of record for March since 1918.

Along the American coast, the pressure departure from the normal ranged from -.24 inch at Juneau to -.02 inch at San Francisco. To the southward of the 30th parallel, except in the neighborhood of Midway, the average barometer was close to the normal.

The lowest pressure reading of the month was 28.40, at Dutch Harbor on the 12th. An almost equally low reading, 28.42, was made aboard the American steamer *President Grant*, on the 15th, near 49° N., 131° W.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, March 1938, at selected stations

Station	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Point Barrow.....	29.76	-0.39	30.22	6	29.42	24
Dutch Harbor.....	29.49	-.21	30.18	26	28.40	12
St. Paul.....	29.56	-.17	30.24	26	28.76	12
Kodiak.....	29.54	-.15	30.16	5	28.52	13
Juneau.....	29.67	-.24	30.35	29	28.86	18
Tatoosh Island.....	29.85	-.11	30.53	25	29.10	15
San Francisco.....	30.04	-.02	30.27	31	29.54	12
Mazatlan.....	29.91	-.01	30.02	8	29.86	25-27, 29
Honolulu.....	30.04	.00	30.19	14	29.83	26
Midway Island.....	30.22	+.15	30.39	15	30.09	4
Guam.....	29.86	-.04	29.92	1, 10	29.71	6
Manila.....	29.86	.00	29.92	31	29.30	12, 13, 22
Hong Kong.....	29.95	-.03	30.19	14	29.66	22
Naha.....	30.02	+.02	30.30	31	29.83	20, 23, 27
Titijima.....	30.03	+.03	30.27	1, 20	29.80	24
Tokyo.....	30.04	-----	30.27	20	29.53	24

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Cyclones and gales.—Despite the presence of low pressure systems along the northern steamer routes throughout most of the month, the weather was not particularly stormy, and such gales as occurred were mostly local in nature and, except in one instance did not exceed 10 in force. To the westward of the 160th meridian of west longitude, scattered gales of force 8 to 10 were reported on some 10 to 12 days. Of these, one was a force-9 gale encountered on the 10th-11th to the near eastward of Honshu; six were force-8 to 10 gales met within the region 45°-50° N., 175° E.-175° W.; and the remainder were at widely separated points. On the 12th, when the lowest barometer of the month occurred at Dutch Harbor,

only one ship reported a gale over the widely depressed area about the center.

The stormiest region of the ocean was that lying along the United States-Hawaiian routes. This area was affected not only by the cyclones that entered extreme north-eastern waters from the westward, but by those that developed between or to the northward of the Hawaiian Islands and the coast of the United States. Of these middle-latitude cyclones, one appeared at some distance southwest of California on the 1st. It moved northeastward and affected Washington coastal waters on the 3d and 4th. Another formed near 30° N., 150°-155° W., on the 7th. It traveled eastward at first on an erratic course, then northeastward, and lay off the Washington coast on the 12th, entering it on the 13th. The earlier cyclone caused gales of force 8 to 10 along the middle half of the San Francisco-Honolulu route on the 1st, with pressure down to 29.10 inches, near 36½° N., 132½° W., as reported by the Japanese motorship *Toho Maru*. In the second cyclone, that of the 7th-12th, the heaviest gales, of force 10, occurred on the 8th, but others of force 8-9 were reported on the 9th and 12th, all within the region 27°-43° N., 130°-145° W.

Meanwhile, after the Low of the 12th had entered Washington, low pressure continued off the coast for several days. The only ship to report a gale close to land during the period was the Dutch motorship *Bengalen*, which experienced a southeasterly wind of force 8 on the 14th, in 46° N., 125°40' W. On this day, however, in a deep cyclone centered near 50° N., 149° W., the Japanese motorship *Hikawa Maru*, encountered the strongest wind reported for the month, a gale of force 11 from west-northwest, barometer 28.64. During the 15th and 16th this deep disturbance moved eastward and lay off the coast of Washington and Vancouver Island. On both these dates 68-mile wind velocities from the southwest for a 5-minute period were recorded at the Weather Bureau station, Tatoosh Island, lowest barometer 29.10 on the 15th. At sea no gales higher in force than 9 were reported on either date, and these at some distance from the coast; but pressures were lower than 29 inches on both dates, with the lowest barometer, 28.42, occurring late on the 15th near 49° N., 131° W.

Unsettled weather persisted off the northwest coast of the United States until the 24th, but no further gales were reported in the vicinity after the 16th until the 22d and 23d, when force 8 to 9 winds were experienced within the locality 40°-45° N., 130°-135° W.

Gales of the Tropics.—All the gales reported by ships in tropical waters were of anticyclonic origin. Of these, a northeast monsoon wind of force 8 was encountered at the south entrance of Formosa Strait on the 10th. Tehuantepecers of force 8 were reported in the Gulf of Tehuantepec, on the 6th from the northwest and on the 7th from the north-northeast.

Fog.—There was much less fog observed on the North Pacific in March than in the preceding month. Along the American coast it was reported on only two days: On the 1st, west of Lower California, and on the 23d, near Cape Corrientes. Between the Japanese Islands and longitude 160° E. fog occurred on 5 days, and northwest of Midway Island, on 2 days.